

REMARKS

Applicant respectfully requests consideration of amended claims 1-8 and 14 and new claims 15-25 in view of the following remarks.

Election/Restriction

Applicant affirms the election of Group I, claims 1-8 and 14 drawn to a reflective insulation system.

Information Disclosure Statement

Documents numbered 1, 5 and 7 listed on the information disclosure statement were published more than one year before the filing date of provisional application serial number 60/271,794 (i.e. available before February 27, 2000) and are therefore believed to be prior art to the present application.

Claim Rejections - 35 U.S.C. §112

Claim 5 has been amended to depend from claim 3 as suggested by the Office Action.

Claim Rejections - 35 U.S.C. §103

The Office Action rejected claims 1-6 and 14 under 35 U.S.C. §103 as being unpatentable over Beaupre (U.S. Patent 4,310,587) in view of Ward et al. (U.S. patent 4,736,552).

Claim 1 features a reflective insulation system that includes a reflective layer, a layer of fiberglass, and a layer of vapor retarder material. As amended, claim 1 requires that the deposits of hot melt glue that bond the reflective layer and the layer of vapor retarder material to the layer of fiberglass to be in direct contact with the layer of fiberglass.

The reflective insulation system of claim 1 is not obvious in view of the Ward et al. or Beaupre patents, because claim 1 includes elements that are not shown or suggested by the Ward et al. and Beaupre patents. Neither the Ward et al. patent nor the Beaupre patent include a first deposit of hot melt glue in direct contact with the layer of fiberglass for bonding the reflective layer to the fiberglass or a second deposit of hot melt glue in direct contact with the layer of fiberglass for bonding the layer of vapor retarder material to the fiberglass.

In Beaupre, the insulation batting 14 is disposed between two layers of paper 18, 20 (See Figure 2). The adhesive 32 bonds the vapor barrier sheet 22 to the layer of paper 20 over the fiberglass batting 14, rather than to the fiberglass itself.

The Ward et al. patent does not disclose or suggest the use of hot melt glue or a vapor retarder material. As such, Ward et al. does not disclose or suggest the deposits of hot melt glue

that bond a reflective layer and a layer of vapor retarder material to a layer of fiberglass, such that the hot melt glue is in direct contact with a layer of fiberglass. Claim 1 is in condition for allowance.

Claims 2-6 depend from claim 1 and are also in condition for allowance.

Applicant respectfully points out that while the Office Action Summary indicated that claim 7 is rejected, but the Office Action did not specifically address claim 7. Claim 7 depends from claim 1 and is also in condition for allowance.

The Office Action rejected claim 8 under 35 U.S.C. 103(a) as being unpatentable over Beaupre in view of Ward et al. and Denenberg (U.S. patent 3,097,124).

Claim 8 features a reflective insulation system. The insulation system of claim 8 includes a perforated outer aluminum layer, a layer of fiberglass, a layer of kraft paper, a layer of scrim, and a layer of polypropylene. A first side of the layer of fiberglass is bonded to the perforated layer by a first deposit of hot melt glue. The layer of kraft paper is bonded to a second side of the layer of fiberglass by a second deposit of hot melt glue. The layer of scrim is bonded to the layer of kraft paper. The layer of polypropylene is bonded to the layer of scrim.

As the Office Action points out, the Beaupre and Ward et al. patents fail to teach a perforated aluminum layer. The Office Action asserts that one having skill in the art would find it obvious to perforate the aluminum vapor barrier layer of Beaupre (Applicant notes that Ward et al. Does not disclose an aluminum layer). Applicant respectfully disagrees. Perforating the aluminum vapor barrier layer of Beaupre would destroy the aluminum layer for its intended purpose of providing a vapor barrier. Applicant respectfully submits that one having skill in the art would not find it obvious to perforate the aluminum vapor barrier of Beaupre.

In addition, the Ward et al. and Beaupre references teach away from perforating the aluminum vapor barrier layer of Beaupre. Ward et al. teaches that any holes in the vapor barrier material are undesirable. Ward et al. states that “vapor can penetrate [pin holes] to wet the insulation or condense on the underside of the superimposed metal decking. As is well known, wetted insulation has significantly reduced resistance to thermal conductivity than does the same insulation when dry.” Ward et al. col. 1, lines 43-52. Beaupre teaches that it is undesirable to deteriorate the vapor barrier characteristics of a foil vapor barrier, as would certainly be the case if the foil layer were perforated. Beaupre states that “[i]n use, insulation products having a foil vapor barrier have certain limitations, however. For example, the vapor barrier characteristics of foil tend to deteriorate as the foil is subjected to flexing or bending forces.” Beaupre col. 1, lines 29-33. Claim 8 is not obvious in view of Beaupre, Ward et al. and Denenberg, because the Beaupre and Ward et al. patents teach away from perforating the aluminum vapor barrier layer of Beaupre. Claim 8 is in condition for allowance.

As amended, claim 14 features a reflective insulation system that includes a perforated reflective layer, a layer of fiberglass and a layer of vapor retarder material. Perforations of the reflective layer allow air trapped between the reflective layer and the layer of vapor retarder material to escape from the reflective insulation as the reflective insulation is rolled onto a reflective insulation roll.

The reflective insulation system of claim 14 is not obvious in view of the Beaupre or Ward et al. patents, because claim 14 includes elements that are not shown or suggested in the Beaupre and Ward et al. patents. The Beaupre and Ward et al. patents do not disclose or suggest perforations in a reflective layer that allow air trapped between the reflective layer and a layer of vapor retarder material to escape from the reflective insulation as the reflective insulation is rolled onto a reflective insulation roll. Denenberg discloses a rigid insulating wall board. As such, a roll of reflective insulation with perforations that allow trapped air to escape as the insulation is wound onto the roll is also not suggested by Denenberg. Claim 14 is in condition for allowance.

New Claims

New claim 15 depends from claim 14 and further recites that the reflective layer is an outermost aluminum layer. The references do not disclose or suggest a perforated outermost aluminum layer that allows trapped air to escape as the reflective insulation is rolled onto a reflective insulation roll. Claim 15 is in condition for allowance.

New claim 16 features a reflective insulation system that includes an outermost reflective layer, a layer of fiberglass, and a layer of vapor retarder material. The outermost reflective layer reflects approximately 97% of heat radiated to the reflective layer. The references do not show or suggest an outermost reflective layer that reflects approximately 97% of heat radiated to the reflective layer. New claim 16 is in condition for allowance.

New claims 17-19 depend from claim 16 and are also in condition for allowance.

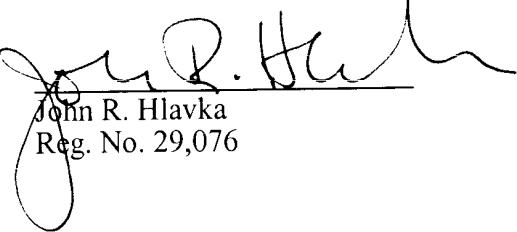
New claim 20 features a reflective insulation system that includes an outermost reflective aluminum layer, a layer of fiberglass having a first side bonded to said reflective layer by a first deposit of hot melt glue, and a layer of vapor retarder material bonded to a second side of said layer of fiberglass by a second deposit of hot melt glue. New claim 20 is not obvious in view of Beaupre, Ward et al. and Denenberg, because the Beaupre patent teaches away from an outermost reflective aluminum layer. As noted above, Beaupre states that “[i]n use, insulation products having a foil vapor barrier have certain limitations, however. For example, the vapor barrier characteristics of foil tend to deteriorate as the foil is subjected to flexing or bending forces.” Beaupre col. 1, lines 29-33. New claim 20 is in condition for allowance.

New claims 21-24 depend from claim 20 and are also in condition for allowance.

New claim 25 features a reflective insulation system that includes an outermost aluminum layer that reflects approximately 97% of heat radiated to the aluminum layer, a layer of fiberglass having a first side bonded to said reflective layer by a first deposit of hot melt glue that is in direct contact with the layer of fiberglass, and a layer of vapor retarder material bonded to a second side of said layer of fiberglass by a second deposit of hot melt glue that is in direct contact with the layer of fiberglass. Claim 25 includes several features that are not shown or suggested by the references and is in condition for allowance.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 23-0630 for any additional fees required under 37 C.F.R. § 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,


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